

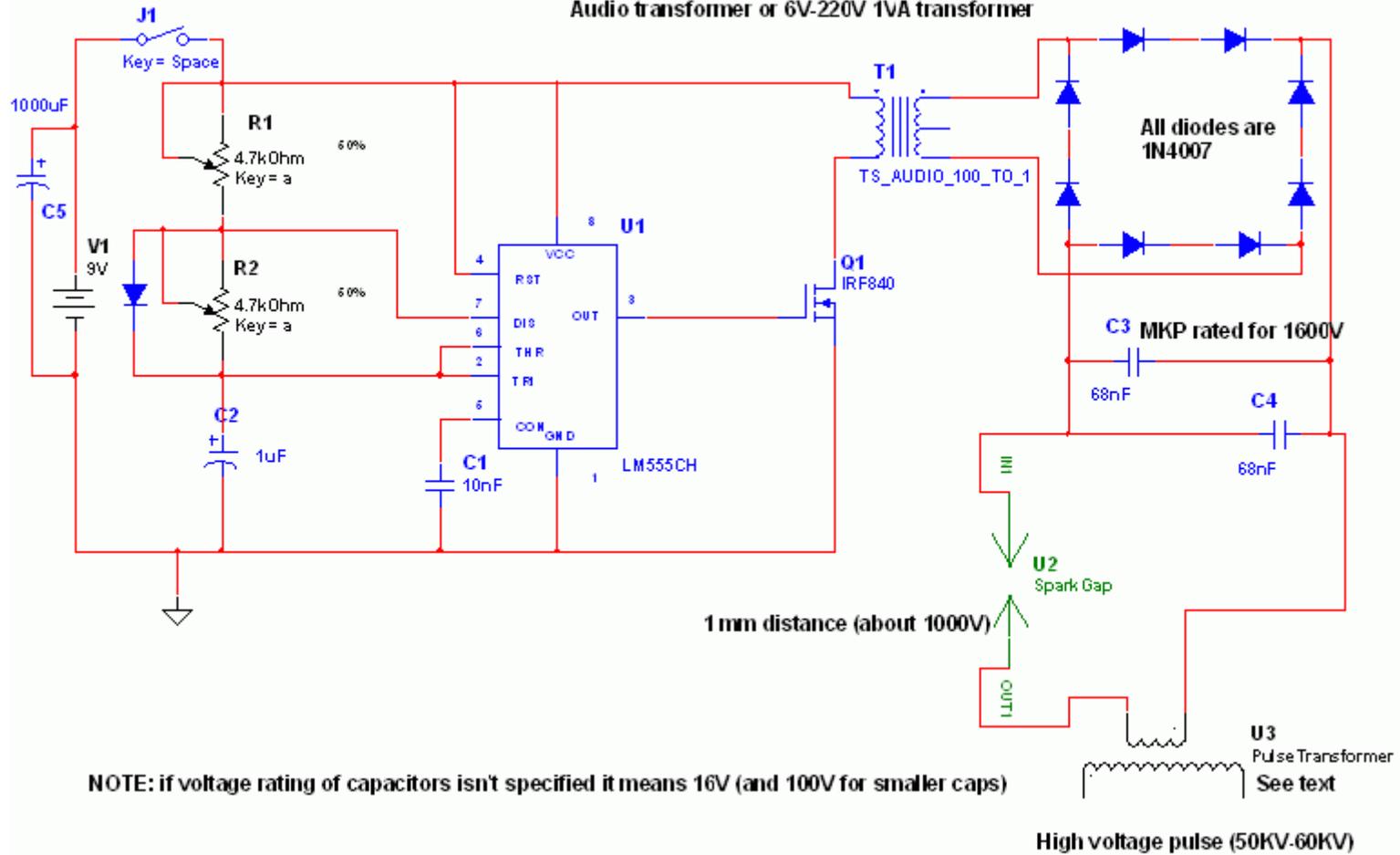
# High Voltage Stun Gun

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# Cheap and easy Stun Gun

Audio transformer or 6V-220V 1VA transformer



**Read before building:**

This device produces high voltage pulses disrupting muscles and nervous system, leaving anyone who touches it in a state of mental confusion. Can be used against ferocious animals or attackers, BUT REMEMBER, this device may be illegal in your state (for eg where I live, these devices are banned). It is quite dangerous for people experiencing cardiac problems, and for electronic equipment (like pacemakers), since it generates some RF. Don't attempt irresponsible actions with this device, it is not a toy.

**After the introduction let's pass to the circuit.**

The 555 IC is wired as an astable to produce square wave with adjustable frequency and duty cycle (notice the potentiometers and diode). This square wave is fed to an IRF840 MOSFET (no need of totem transistors since frequency is low and the IC has enough current capability to rapidly charge/discharge the gate). As a substitute of the MOSFET, a bipolar transistor can be used (and a 100ohm resistor between 555 and base of the transistor). Valid BJT can be BU406, but also smaller BJT can be ok, keep in mind that it must handle at least 2A continuous. The inductive kick snubber isn't needed because the power is low and it is almost totally absorbed to charge the tank capacitor, in addition since this device is battery operated we don't want to dissipate the power on a resistor but we want it in sparks. With a snubbing network you will experience lower firing rates. USE A PUSHBUTTON SWITCH FOR SAFETY

Construction of T2: this is the real boring part. Since it is unlikely to find it in shops we need to build them. Materials needed: enamel copper wire (0,20 mm or 0,125 mm), ferrite stick, LDPE sheets (0,25 mm). Secure the ferrite stick with a layer of LDPE (polyethylene, as a substitute use electric insulating tape) and glue it (or tape it) Place 200-250 windings on the LDPE (even more windings if the stick is more than 1'), another LDPE layer, another 200-250 windings and so on to finally have 5-6 layers (approx 1000-1400 turns but even more doesn't hurt performance, but be careful for internal arcing that will ruin it). Insulate it again and place the primary winding, 15-20 turns of 1mm wire are just ok, too much windings (too much resistance and inductance) will lead to smaller current and smaller spike in T2 secondary because of lower rise time, and too few will not saturate the core. I chosen MKP capacitors because they have low ESR and ESL (they are widely used in Tesla coils as MMC capacitors).

The spark gap can be simple two crossed (but not touching) 1 mm spaced wires. It acts as a voltage controlled switch, firing when the voltage is enough to ionize the air between them (turning it to plasma with small resistance). Keep in mind that it would be wise to place it into a small plastic container and fill with oil letting bubbles out (don't use motor oil or frying oil but pure mineral oil which has no water in it).

Disclaimer: As I have seen before, IT IS NOT A TOY, DON'T DO ANYTHING STUPID WITH IT. I DON'T ACCEPT ANY RESPONSIBILITY OF DAMAGES DONE TO OTHER PEOPLE OR YOURSELF WITH THIS DEVICE. IF YOU WANT TO BUILD IT YOU MUST ACCEPT THIS CONDITION. Using the procedures described above would prevent you from any damages/troubles. Don't carry it in streets or public places if they are banned in your country, and don't use it near electronic devices. As the wise man says use it like a deterrent, even against animals.

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